DEVELOPING MARITIME STANDARDS

FOR THE

PRESERVATION AND RESTORATION OF LARGE MUSEUM SHIPS

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TUESDAY, SEPTEMBER 3, 1985 8:30 O'CLOCK A.M.

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MODERATOR McGRATH: Good morning. We will start with Session 3, Restoration and Preservation Work on World War II and 20th Century Vessels.

Our first speaker, and I'd like to thank this speaker, Strafford Morss. He is consulting engineer with the USS Massachusetts Memorial in Battleship Cove in Massachusetts. Strafford has done, I think, a really great job working with us and coming here to talk to you all at his own expense. I really have appreciated that.

Strafford.

[Applause].

MR. STRAFFORD MORSS: Well, thank you very much, Tom. It's a pleasure to be here. Certainly each session yesterday, as far as I was concerned, was worth the price of the airplane flight out. I am really looking forward to today and tomorrow.

At some point early on in our presentation, I will tell a brief shipyard story. I will also use shipyard language. I hope that I don't offend anybody in the process. It's just sort of in keeping with one of the pictures, one of the slides that I have here, and it helps to perhaps set a tone for what went on

during that particular point in history.

Talking about World War II ships. When a warship is commissioned, she becomes home, work, and protector to her crew. Her officers and men become family members dependent on each other for their mutual safety.

Years pass, and when the ship is mothballed, all of her equipment was operational when she was deactivated. She had completed a full power run. All of her machinery had been disassembled, cleaned, and dried out, minor repairs made, and, in addition, she was totally painted inside and out. She was also made totally weathertight.

As her commissioning pennant came down, she looked clean and fresh as compared to her sad members or companions in the reserve fleet. Further years passed, and to the sailors of the active fleet and the reserve fleet, she is now a rusting hulk. When she was declared in excess, she was open for stripping, cannibalization, and unrestrained vandalism.

This short period of time will do more damage to her than either a collision or a successful kamikaze attack. Imagine a once proud destroyer under tow to her new home as a museum, faded, rusty, smeared, and with a seven-degree list. Her new masters have signed

an agreement with the United States Navy that the ship is on permanent loan, but she has to be maintained in a manner satisfactory to the Navy but at no cost to the Navy. It's a 1956 public law that outlines this whole process.

It takes really a hearty soul not to agree with Dante looking at a ship in this shape, "Abandon all hope ye who enter here." This is a shared experience with the more than 37 ships that the Navy has loaned out to non-Navy organizations for museums and display. These ships include four battleships, two aircraft carriers, two cruisers, five destroyers, one destroyer escort, 18 submarines, two minecraft, a Coast Guard cutter, and a number of other smaller auxiliary vessels.

In addition, the Navy maintains at least two ships I know of as display vessels for the public, Constitution in Boston and Barry in the Washington Navy Yard. Until last year at about this time, Missouri was also open for display in certain areas of Bremerton, Washington, where she drew more than 200,000 people a year. Of course, she is now down at Long Beach being reactivated. This presentation will not deal with the Navy-maintained ships.

The National Park Service has developed

comprehensive standards for the managing of historic and prehistoric buildings. These standards are more applicable to wooden vessels than to steel. However, the basic philosophies are very sound. Two words epitomize the nature of the undertaking: Managing the project, working to a well thought out plan, and respect for the ship and her equipment.

The display philosophy is fundamental. If you do not have one when you start, the enormity of the project will force you into developing one. Geographical location is critical. A southern location will allow you to display more spaces than if you were in a northern location. And the size of the maintenance staff will also be a determining factor. Or, you could say the size of your budget determines the size of your maintenance staff.

Another facet of the philosophy will be the time period you select as the period your ship will represent. This becomes difficult when you consider a ship as a platform form carrying weapons. During the course of her life, the ship represents both technological and sociological changes that were part and parcel of the time in which she served. A case in point. The Iowa class ships have gone from 1930's and 1940's technology in one jump to mid-1980's. In fact,

the ships now back in service, New Jersey and Iowa, are more effective and infinitely more powerful units of the fleet than when they first went into service in 1943. Yorktown and Intrepid are in their mid to late 1950's garb now, and they look very different than the ships that turned the Pacific war around when they came into service in 1943.

Kennedy and Laffy, in their guise as conversions of Fram I and Fram II destroyers respectively, served very different roles than Laffy did off Okinawa when she became the ship that would not die. Cassin Young, Kid, and the Sullivans are more evolutionary. Their roles are much closer to those that they had when they were built, because they have more limited hull and electrical capabilities.

And when you're looking at a World War II ship and how it developed, it is the electric plant that governs what will have occurred to her, the size of her electrical installation.

Your ship, or if you have a World War II ship, represents a unit that was designed in the late 1930's. And if she did not serve into the mid-1970's, many of her sisters did.

This is Battleship Cove in Fall River, Massachusetts. This is basically where we started in

1965, one ship, Battleship Massachusetts. And this is the reason Battleship Cove and exhibits like her exist. Tourists, passing visitors, support the operation by their admission fees. In this case, county government recognizes that an annual visitation in excess of 125,000 visitors would serve as a catalyst for economic development in the rest of the area, and the Battleship Massachusetts has done exactly this.

From single ship to a three-ship display in Waterfront State Heritage Park, all in 19 years. When the battleship originally came, the Fall River waterfront can only be termed an industrial waterfront disaster area. It's a tribute to county government, and I think some of you will remember Karl Kortum's comments yesterday, but the county government has been absolutely fundamental in supporting the ship and the things that we have been trying to do here.

Now, this gives you an idea of the enormity of the project that you undertake when you get a World War II ship. This is Massachusetts on the morning of her launching. The yard workers here are stripping the shoes away from the stern of the ship.

Now, here is my World War II story. Warren Knott, the general superintendent of the Bethleham Quincy Yard, from early 1940 on, whenever he took a new

group of apprentices about in the yard, would tell them at the end of the first day, "Laddies, there is a war coming. Shipbuilding ain't like fucking. You got to be taught."

[Laughter]

MR. STRAFFORD MORSS: And when you are dealing with something this size, you see exactly what he meant. Again, Massachusetts on the morning of her launch.

This picture of the starboard bow is interesting because the forward section of the ship indicates that she is structurally a transition ship. I don't know whether you can see it, but the ribs forward here are welded, and only the strakes of the plating are riveted. This is very much like World War II destroyer construction.

Coming down on the port side, you're about even or maybe a little aft of No. 2 turret. You're looking forward. I think you can see the additional riveting, and this is necessary because of the tremendous strains imposed on the ship by the 16-inch main battery.

Also visible, and I don't know whether we have a pointer here or not, I think right about there is one of the 106 sea openings that the ship has in her

bottom. You can also perhaps, if you get up close, and none of you are at the moment, see the riveted doubler compensating plate that strengthens the shell opening around the shell cutout.

This is the port quarter looking forward. These are three more openings. You can see the riveted compensating plates. You can also see the riveted structure here, both frames and plating. There are only nine openings in this hull that are not on the flat bottom, three here -- these are all torpedo protection system openings -- three on the other side, and three up under the skegs for salt water inlet for emergency fire pump and refrigeration machinery.

The important thing about these, in the 1946 vintage inactivations, if your internal piping was over ten inches, these sea openings were externally blanked with a box blank; ten inches and under, they were internally blanked.

Now, the reactivations for Korea indicated that the internal blanking was not a good thing, and ships activated and inactivated during the Korean period will have ultimately all external blanking, as did Cassin Young.

The same view, but looking aft. You see the riveted structure again. In this case, it's carried

quite far aft because of the armor protection protecting the outboard shafts. There is the boss of the outboard propeller.

Dockside humor. This is the day before her launch, and other than giving you an idea what the ship sort of looks like all together, the photographer just happened to catch an intimate moment. Right up here, the 1941 equivalent of those green plastic houses, the heads aboard the ship, and it happens to be being used.

[Laughter]

MR. STRAFFORD MORSS: The other thing that is very interesting from a historical point of view is, look at the stern; it's absolutely clean. And look at the four-bladed propellers

Massachusetts and Puget Sound in 1944. Again, look at the stern. Now you see the tubs for the 40-millimeter battery. The 40-millimeter battery came to the United States from the United Kingdom, originating in Sweden, probably in violation of international law. It's a very interesting story how these guns came on the United States ships.

Also look, one of your original historic propellers is gone. The outboard screws are being changed in June of 1944 to five blades because of vibration problems.

The Massachusetts now in 1964. Here you have the ship. She has been inactive for 17 years. She has been declared in excess and stricken from the register of Naval vessels. I was the recorder of the subboard of inspection and survey that declared her unfit for further service. It was a put-up job. She was in beautiful condition at the time.

[Laughter]

MR. STRAFFORD MORSS: Notice the huts closing over the equipment for preservation. When inactivated, all the internal spaces and equipment were placed under dehumidification. The stuff that couldn't be brought inside was placed under huts and also put under dehumidification. The dehumidification system would bring the relative humidity in the ship down to the low 20 percent range, and she would sit there resting.

Massachusetts right at the stern. This big hut here houses the SK-3 17-foot diameter parabolic dish for the main air search radar. You can see the huts over the 40 millimeter mounts. The yellow piping circulates dehumidified air from the interior to the mounts and back again to the interior of the ship.

Coming forward, this is now the starboard quarterdeck. Look at the condition of the paint, peeling. Look at the condition of the deck. The ship

has been declared in excess.

Notice these yellow blanks here. These are part of the blanks that secured all openings to the ship's exterior. When the ship was dehumidified, she was tight and made weathertight to the point that you have less than one square foot of opening to the exterior for every one million cubic feet of internal volume. The Massachusetts has about four and a half million cubic feet of internal volume.

Same patch in June of 1965. We replaced it with concrete to avoid tripping hazard. The wood deck serves a number of purposes. This a two-inch teak deck laid over one and a half inches of armor plate, Class B armor plate.

Underneath the armor plate, where the wood deck is, there is no insulation in the overhead, so the wood deck serves not only as a traditional shipboard feature, but it serves two other very useful purposes: One, insulation, and, two, providing a change for the personnel servicing on board, giving them a subtle change as they walk on the wood deck as opposed to walking on inch and a half steel armor deck or, if you're down below, six-inch armor deck of the second deck.

What lived in those houses? Well, in this

case, you have a boat boom, you have an aircraft retrieval boom, miscellaneous stanchions and bridles. The aircraft retrieval boom is along in here. You also had all the ship's radar antennas, both air search, surface search, and fire control.

In this picture, the airplane crane is being erected. It lay flat on the deck during the entire inactive period. Five months later at 3:00 o'clock in the morning on the 31st of January, 1956, it fell. Why? The wire bull bridle holding it up parted at the swag fitting. The zinc was totally eaten out, and the wire corroded. Point 1, if you will, a piece of corroded wire cannot be trusted.

Here is a case of the foremost platform, radar platform, being lifted from the deck to go back up there. These mast platforms had to come down to make Brookline Bridge clearance, which I believe is 132 feet at high water. The breakdown flange bolts up there. This makes a very important point. This and the next slide are the only physical record we have of the reinstallation of the mast and its platform. We kept no other records, and this slide and the next one will tell the rigger, if we have to take them off again, the size of the equipment used and the approximate weight of the lift.

Here you go. Someone who knows what they are looking at can tell you what size this crane is. He knows how long the boom is. This is very significant here. He is picking the mast platform, which is 20 feet long, up on the whip of the crane. It's not very heavy. On top of this, right there, will go another 34 feet of masting, including the forward surface search radar platform.

Oh, dear. This is a 40-millimeter mount being reasembled. Massachusetts carried the heaviest 40-millimeter battery in the Navy, with the exception of the four Iowa class ships. She carried a total of 18 mounts. By 1946, at the postwar overhaul at Puget Sound, three of those mounts were removed.

Now, obviously, when you're getting a ship ready for display, you reassemble all these mounts. Or do you? Tell you right now, 20 years later, we are thinking of re-covering the two mounts on the 05 level and the two mounts on the 03 level.

Weather is a consideration of where you let the visitors go. Because of this, we don't let our visitors go above the bridge on the 04 level. North Carolina, Alabama, sister World War II ships, let their visitors go into the tower and up to the 08 level. But they are further south, and they don't have the ice and

corrosion problems that we do.

This particular patch was done during stripping. Right here was the only place that the Massachusetts was hit, suffered a direct hit from enemy fire. This was a 7.9 inch shell hit from Battery El Hank at Casablanca; penetrated the one and a half inch armored main deck, which served to do exactly what it was designed to do, cause fuse initiation of the projectile. It then detonated and sprayed a lot of shrapnel around the second deck, chewing up the Marines' clothing. It didn't do any other harm.

The hole was never repaired. A light plate was placed over it and decking relaid. And I couldn't believe it when I saw it when I first went aboard the ship in November of 1958. We, of course, couldn't leave the deck bare, so another concrete patch goes in. This is one of our earliest attempts at interpretation. Not a very good one. "Big Mamie's Battle Scars."

This is the chief petty officers' galley down below on the second deck. You will notice again a characteristic of a 1946 vintage inactivation. All non-painted surfaces were covered with preservative. This includes brass, bronze, or stainless steel, as in the case of this galley sink, or counter.

Here is the range. The white stuff on it is

peeling white paint. Now, contrary to popular belief, this doesn't indicate a bad paint job or poor surface preparation. It is an indication that the ship was unheated during her inactive period.

We find heat is one of our fundamental preservatives on the ship, and the Massachusetts and Kennedy, for instance, will burn 30 to 35,000 gallons of No. 2 fuel oil a year heating the ships. The design figure is 50 degrees when it's zero degrees outside. And we use recirculation so that we do not take up outside air. Otherwise we just couldn't supply enough steam to do it.

We have two auxiliary boilers on Massachusetts. We have cut into the intermittent steam system, located on the second deck. Intermittent steam was used to heat all World War II Navy ships, with the exception of submarines. Normally at 35 pounds per square inch, we use 12 to 15 pounds from our auxiliary boilers. It works just fine.

One of the sophistications of a big ship is that, with the multiple skins in Massachusetts on her side from the third deck down -- she has five skins before you get into the interior of the ship, and three bottoms -- is that you end up with, in effect, a dead air area which does not respond rapidly to the changes

of the exterior temperature, either to the air or to the water outside. The temperature changes very slowly, both cooling down in the fall and warming up in the spring. It gives the paint a chance to conform to the movements of the steel beneath. So we have found that essentially the third deck and below we do not have to heat for paint preservation. The second deck and above, absolutely, if the spaces are going to be displayed.

This is one area on the ship that needs almost no interpretation. "Clara," the No. 3 16-inch gun in No. 1 turret is virtually self-explanatory and has been a very popular display area all the time that the ship has been open.

This is a World War II K-gun. We found these things all the time on destroyer types, both World War II and later. It's also an example of what not to do. Look at the wooden decking. You're not on a destroyer, you're on a battleship. In 1974, we got the destroyer Kennedy and mercifully moved it.

A 16-inch projectile and three powder bags on display on Turret 3. The projectile is a practice projectile, in fact. The paint job on it was inaccurate, and the tip there is also inaccurate. If you're looking for accurate technology, you get the

idea but you don't see the actual thing here. But it still stands six feet tall. At best, it weighs 1900 pounds, and it's a marvelous bug squasher.

This is an example of a junior officer's bunk room. It's moderately authentic. This is in the after superstructure. The chief petty officer piperail berths are authentic, as are the mattresses that you see there. These are the standard enlisted berths. It is not authentic for officers' quarters, and we've got three different types of mattresses -- the innerspring mattress that is normal for the CPO berths, the regular enlisted mattress, and here is a foam rubber mattress from a ship sometime during the mid-1960's. But it still gives the visitor a very good idea of the conditions that the junior officers lived in aboard a battleship during World War II.

This is North Carolina, a picture taken in 1964. Notice the antennas. The electronic antennas really will date a ship's service period or date a photograph better than anything else you can see other than a few external features. Look at these antennas very closely. This seems awfully small, as does that, as does that, and as does that. North Carolina came virtually complete with the exception of one lathe when she went down to Wilmington in 1961. One thing that

she apparently did not have, however, were her electronic antennas. This is not unusual. If the antennas were stored off the ship, they very often got co-opted by somebody else during the period. But look very carefully at this equipment, the Mark 37 directors and SK-3 antenna up here.

This is Massachusetts. You're looking at the same equipment, but we were able to keep all of ours because it was stored on board. Look at the difference in size. The director is the same. And right there. And here is the full 17-foot diameter SK-3 antenna sitting on its 2800 pound pedestal.

Let's go back again to make the point, coming forward. Other than that, North Carolina is a marvelous exhibit, and they have, during the course of time, been able to come up with some of the missing antennas.

It's important that you maintain your antennas, because they aren't around any more. This SK-3 antenna, there were only 75 sets built. The SG here on the Massachusetts carries two, as did North Carolina. There were 901 sets built. 901 is a lot, but when we destroy them all after 40 years, you don't have many left.

Antennas represent technology. This

particular one is the Mark 8 Mod 2 antenna on the after Mark 38 main battery director. It's particularly significant historically in that it was this antenna or this type of antenna that was used by all the Pearl Harbor veteran battleships when they completely annihilated the Japanese battle fleet in October of '44 at Tsugaru Strait.

Technologically it's significant, as this particular antenna up here is the first example of a phased array radar manufactured in the United States. It electronically scans instead of rotating. Of course, the thing obviously rotated on a director cupola.

USS Alabama. The spiral staircase here is non-authentic, but you have to make some exceptions for the public who are not the same active people as the young sailors who would have been here. This is exactly the way the projectiles were stored, 16-inch projectiles. Look at the bucket here, a very authentic touch.

Now, then, this ring right here rotates, as does this inner ring, which forms part of the ammunition hoist central structure of the turret which rotates as the turret trains. The turret is trained on its target. You select a projectile from here,

parbuckle it out on its end on to the inner rotating ring, which indexes around to the ammunition hoist and moves in, is moved into the shell hoist. All of the projectiles are moved on their bases in a vertical position by parbuckling. They use these hydraulically driven capstans.

The deck is oiled to allow the projectiles to slide. And because you have so many major moving parts, you don't want the sand in this bucket to get into these moving parts. What do you use the bucket for? Well, obviously, sailors don't smoke around ammunition. They learned a long time ago that that was not profitable. They also don't put the sand on the oil decks for good footing, because that will end up messing up the machinery. What else do you do? You have a Marine at the one access on the third deck. He doesn't let anybody in or out when you are at general quarters. So, think about a cat in a sandbox.

[Laughter]

MR. STRAFFORD MORSS: Again, the projectile deck on Alabama, you would normally have more than 300 projectiles here stored, more than 100 rounds per gun.

This is the powder hoist at No. 2 turret. This is the tallest vertical space on a battleship, more than 30 feet. It's called the cathedral. And No.

2 turret, that is the very high turret.

Another boat comes to Battleship Cove, PT-796. You undoubtedly remember seeing this one being towed through the streets of Washington on a trailer with a number 109 on it during President Kennedy's inauguration.

What is authentic? 796 and her quonset hut. Notice, we've had to put a wooden boat undercover. Well, the shark teeth were the crew's choice. In this case, we chose to show them. But look at the planking. All Higgins and Elco boats were built with double diagonal planking. Obviously, during 796's service with the Navy, the Navy has caused her to be replanked, but not authentically.

This is the submarine Lion Fish, our third acquisition. Actually, she was the second major acquistion. She is an immobile, thick-skin World War II submarine. She was a training hulk for the Naval Reserve program for a great many years in Providence. The color scheme is not authentic in this case. And notice that we have had to again make concessions to the visitors by installing booby hatches in the forward and after torpedo room access ladders because you don't want visitors climbing up and down vertical ladders. They won't do it.

Here we are in the forward torpedo room of the Lion Fish. You can see the access ladder here in this corner, Mark 14 torpedo. Notice the black pipe grillwork. We are trying to save the ship from her visitors. Also what are missing are the numerous bunks that would have been in this space. We had to take them out in order that visitors could move around. Even now, lots of people feel very claustrophobic. I will be interested to see how Pampanito handles this.

USS Joseph P. Kennedy, Jr. in February of 1974. Of the three major units in the Cove, the Kennedy was the only one we received that was physically worn out when we got her. She had been 28 years in service. She was a mess. She had major structural problems. She has major structure problems inside. When inactivated, all of her sea openings were blanked internally, and, in some cases, they used locker tops as the blank. The Navy didn't intend to keep her long.

In the machinery spaces we have found tremendous condensation occurring during the course of the mid-fall to the mid-spring. The ship is rotting out from the inside. We eventually installed dynamic dehumidification in the machinery spaces. This keeps the machinery spaces in the mid-30 percent relative

humidity as long as the crew is careful about maintaining the closures. If they aren't, the relative humidity goes up to 60 percent, and the machine costs us 15,000 kilowatt hours of electricity a month to run at 60 percent relative humidity.

Joseph Kennedy ten years later. Yea! Our K-gun has gone where it belongs. Again, not entirely authentic for a Frame I, but absolutely typical of anti-submarine equipment installed aboard a destroyer. So, really, not a bad display.

A 16-inch spanning tray coming out of the Massachusetts storerooms. In 1982, the Navy got ahold of us and said, "You have certain spares on board and they are located in such and such space, and we are coming to get them." Massachusetts supplied $55 million worth of ordinance spares for the reactivating battleship program. Between the three ships, Massachusetts, Alabama, and North Carolina, they supplied $250 million-plus worth of ordinance spares no longer available in the Navy supply system and no longer, many of them, able to be manufactured without vast expense. All in mint condition.

These are spanning trays for loading the 16-inch guns. Perfect condition after 40-some-odd years. Ready to be used at a moment's notice.

The thing that makes any museum tick, volunteers. These happen to be tin-can sailors working on the Joseph P. Kennedy, Jr. These volunteers come down and have two working weekends a year aboard the Kennedy, one in the spring and one in the fall. This spring, for instance, they replaced the starboard screw guard which was collapsed, and I forgot to point it out during the stern view picture. But Friday afternoon, a van came up with a totally prefabricated screw guard in the back of it. By Sunday morning, the screw guard was in place, totally welded and primed . . . an absolutely professional job.

Now, as opposed to what we heard yesterday, I personally need education as to why I have to keep the piece of junk that they cut off. Steel is steel, and piping, formed in any sort of thing, as far as I am concerned, that piece of historic fabric deserves to go about 12,000 feet deep into the ocean.

Well, somewhere we are missing the last slide, which really was a picture -- that is it. We do use the ship, just to finish up, in the evenings very extensively, and it's this additional uses other than the walk-aboard visitor that make us work financially. In fact, the evening uses give us within five percent of our walk-aboard income. We couldn't survive without

it.

Thank you.

[Applause]

MODERATOR McGRATH: Thank you, Strafford. I was so fascinated, I lost track of time. I have to apologize to you all. We will probably have to move right on without any discussion to our next speaker, and that is Peter Steele. Peter is a supervisory museum curator at the Charlestown Navy Yard of the Boston National Historical Park.

Peter is going to talk about Standards for World War II Ship's Outfit. I think he is going to talk about that. Peter.

MR. PETER STEELE: Thank you, Tom. As Tom said, I come to the maritime world with a curatorial background. I worked for historical sites as curator of historical sites for the National Park Service in Manhattan and then at Theodore Roosevelt's home out on Long Island, and, for the last eight years, at Boston National Historical Park, which is a series of eight historical sites in Boston.

Could I have the slides, please. So, it was with some joy and shock that I began to become aware of World War II ships such as aircraft carriers such as the Shangri-la, shown here. But I did learn in the

course of becoming involved with World War II ships that there are some similarities, curatorially speaking, between warships and other structures. Isn't this heresy, Faneuil Hall in downtown Boston. USS Cassin Young, a Fletcher class destroyer, built in 1943, saw service in all the major naval campaigns in the Pacific, the last two years of the war, was deactivated in 1946, reactivated in 1951, saw active service throughout the 1950's, was finally deactivated in 1960. She was named for a Navy captain who received the Medal of Honor for his action at Pearl Harbor, was later killed in command of the heavy cruiser San Francisco at the battle of Guadalcanal.

The Cassin Young was in inactive service from 1960 to 1978, when she was acquired by the National Park Service. You see her here upon arrival in Boston Harbor in 1978.

We all love to show our ships in dry dock, apparently, the rehabilitation that the Park Service accomplished on this ship. We used modern paint systems on the hull. We were able to record this activity both photgraphically and through ultrasonic measurements. She came out looking more like this, and was finished up to a late 1950's appearance. The National Park Service treats this vessel with the

historic period of late 1950's.

Again, you will wonder why these houses keep appearing. It's because, curatorially speaking, there are similarities between historic World War II ships and houses such as the commandant's house in the Navy yard.

Going back to the Cassin Young as she looked in 1978. If you begin to look more closely, you see these various parts of the ship, relatively fixed equipment such as antennas and boat davits, gun directors, five-inch 38 gun mounts. All of these in terms of standards, I would suggest be treated as part of the structure. One of the major things to be done with them is simply to keep them painted and protected. That will make them last a long time. One of the advantages of World War II vessels, steel construction.

Torpedo tubes, another fixed part of the ship's equipment. However, when you get to the level of a 40-millimeter gun shown here, in the case of the Cassin Young, you no longer have a part of the ship's equipment which came with the ship when the Park Service acquired her. Cassin Young had 40-millimeter guns through about 99 percent of her active service, but in the last eight months of service, they were stripped off for economic reasons as well as the fact

that they had become obsolete. So we decided to acquire some, and we did, and we put them aboard. However, I can't guarantee you that they're exactly the same type. There are vast permutations of 40-millimeter guns. And so we made the decision to enter this gun into the ship's museum collection. We have accessioned it. Someday we will catalog it.

A 20-millimeter gun on the ship's fantail, like the K-gun that Strafford Morss was speaking of and showing you, this is an inappropriate mount. There were 20-millimeter guns on the fantail of the Cassin Young during World War II, but not by the mid-1950's. I think it's important for you to consider, if you are dealing with World War II ships, whether this kind of material should be accessioned into your collection. How else are you going to -- what other system do you have for controlling the information about that gun? Where did it come from? Exactly what kind of gun? In this case, this gun will probably be taken off the ship at some point in the future and used in a display in another building when we get an exhibit building developed for the Cassin Young and the Navy yard. In this case, the gun was actually, both 20-millimeter and 40-millimeter guns were donated to the National Park System, but the Cassin Young herself is owned by the

United States Navy, so there is even a difference in ownership in these cases.

Interior machinery is, of course, everywhere. These are minor examples. Looking into the laundry room, looking into the galley. In this case, you're looking at a slide of a photograph, my flash burning in the middle of it. But the point of this is documentation. When the park acquired this ship, we took many hundreds of photographs documenting every exterior and interior passageway, compartment, bulkhead, bulwark, and every part of it. So I just took a couple of slides of some of them to give you that idea. An engine room. A chief petty officer's mess in 1978, before the Park Service did anything to it. As it looks now with the bunk frames and berthing materials installed.

If you don't take that kind of documentation, you very soon lose track of what came from where, what it looked like when you got it, what changes have been made. Again, the comparison to a historic house museum becomes a little more clear. This is the Paul Revere house in Boston -- to think of a ship as a place where people lived and where they were furnished bedrooms, otherwise known as compartments.

Another point I'd like to make is to document

changes that you make while on the ship. What you see here are some of the fixed equipment in the Cassin Young's pilot house, electronic and electrical and communication devices. These particular shots show it after rehabilitation. We also have those showing it before rehabilitation, which I won't show you now.

In this case, the after crew's head is shown just at the beginning of a rehabilitation, actually a change process where we determined with Strafford Morss' assistance that it was crucial to have heating on the ship. This compartment was selected for the boiler system. That is really one of the best ways to preserve both your fixed parts on the interior and your non-fixed parts on the interior spaces of the ship as well as the bulkheads -- is providing some heat which will keep the paint from peeling off in extreme cold temperatures and will reduce your humidity levels greatly. So, document the spaces before, during, and after major changes that you're making to the character of the vessel.

Back to the exterior fixed equipment. Torpedo tubes. But as you look at them a more closely, like anywhere on the ship, you'll find there are other parts to them. These torpedos that you see here with their little end sticking out are in fact period pieces.

They were accessioned into the museum collection. They did not come with the ship. We actually know where we got them, where they are, and what type they are. We have that systematically recorded. But as you go around the ship, you'll find this type of thing. The point I guess I am trying to make here is that these museum artifacts are everywhere around the ship. You're looking at a kind of updated hedge hog depth charge called a hedge hog. The hedge hog framework came with the ship. But the hedge hogs themselves were acquired separately.

The old depth charge track on the fantail with its depth charges, which are accessioned into the collection. And there this type of movable, non-fixed equipment is everywhere on the shipp -- fenders, accomodation ladders, and so forth.

There is a case of some hosing, electrical wiring, that is displayed as it was in the historic period. It came with the ship. How long is it going to last in that shape, sitting out there, open to all the weather, the sun, the rain, vandalism, and so forth? We ought to begin to think about getting some kind of replacement for this. I would suggest that to you.

More non-fixed equipment, relatively speaking.

Fire nozzles. The idea partly is that those kinds of things are important in giving the ship a realistic and lived-in appearance, and to help the visitor and the historian understand how the ship operated, what it was like to live on board, how you could escape if the ship sank. A typical historic ship museum object now is a boat. This one we think we are going to display outside. We have nowhere else to display it at this point, so we are trying to stabilize it and document it as we go along. A 26-foot motor whaleboat. The Cassin Young had two of them. We have been able to acquire one.

There are other ways of trying to save your life if the ship goes down. Yet another way, an inflatable life raft. These are all things -- well, they vary. Some of them are period pieces which we acquired; some of them came with the ship.

A ship's bell, another period piece.

Moving to the interior of the officers' ward room. If you notice, the design of the curtains, the color of the tablecloth, the chairs around the table. This is how it looks today. This is how it looked, looking actually at the other direction. But this is how it looked in 1959. The curtains are about the right color. They are a $3,000 reproduction. The

tablecloth is the wrong color. If you go back, it's green here. It was brown then. The chairs in 1959 had a kind of cover over them. We have a ways to go yet in this compartment.

The comparison to a historic house museum, in this case, the commandant's house in the Navy yard, which has been developed a little further. Berthing compartment. Here is another case in point. We acquired the mattress covers, which are like sheets, from the Navy supply, thinking that they were the same -- until very recently. A crew member came back to us, actually had with him his mattress cover from 1959. The things that people save.

[Laughter].

MR. PETER STEELE: We found that it was in fact both different in material and design from the mattress covers which you buy today from the Navy. And here we have literally hundreds of mattress covers in our museum collection which we are in the process of deaccessioning. But this fine gentleman will not give us his mattress cover.

[Laughter]

MR. PETER STEELE: So we have had it reproduced, and we put that into the museum collection. That is why, Strafford Morss, you have to keep pieces.

[Laughter and applause]

MR. PETER STEELE: Historical documents are another part of a museum collection, including visuals, that document both the activities aboard a ship and the details of spaces inside. Maybe we are beginning to get the idea of all the different types of things that can be in a museum collection for a World War II ship and some of the things that shouldn't be included in the collections. I think it becomes imperative upon us to have a planning document, whether you call it a collection policy, an acquisition policy, a scope of collection statement, or whatever. If you don't know what specific things you need for specific compartments that you want to furnish and the general types of things that are appropriate for your ship and for displays about your ship, you can end up with all kinds of inappropriate, expensive, and God knows what -- that then you have to deal with, either to deaccession it or preserve it. So, it's really important to have a scope of collection statement.

Again, the comparison to the Paul Revere house where you expect the objects to be accessioned and catalogued, protected, and preserved. It's a little harder to see five-inch 38 shells in an ammunition hoist area as quite as historic, but they will be.

This type of plaque is a good example of an artifact which leads to important interpretation and adds a lot to interpretation, given to the Cassin Young by members of the USS Princeton, which was an aircraft carrier hit by a Japanese bomb in the Battle of Leyte Gulf. The Cassin Young was drawn alongside to fight the fires on the Princeton. You remember seeing some of the hoses that we saw earlier in the presentation. The hoses on the Cassin Young, however, are not as big as the hoses on a cruiser, so the Cassin Young was called back. To cruiser Birmingham was called forward to help fight the fire on the Princeton. Very shortly thereafter, the Princeton exploded, with very heavy damage to both the Princeton -- she was ultimately sunk -- and heavy damage to the Birmingham, and severe loss of life on both vessels. Over 120 survivors of the Princeton were rescued by the Cassin Young. So, an artifact like that is important not just as decoration, but in leading to the story and the history and the significance of your vessel.

However, if you've been on a guided tour and get into the reality of World War II interpretation and then come upon the ship's store stocked with 1980 parts, it takes a little wind out of the sails. Here is another compartment where we have some room for

improvement.

Again, if you imagine going into the Paul Revere house in Boston and paying your money to go in there, coming all the way from Hawaii, say, to see this house, and you see 17th and 18th century artifacts, well displayed, and then you come across a whole room which is 1928. Doesn't help.

There are, fortunately, established and fairly sensible ways of recording objects in a museum collection, as we all know, which make it a lot easier -- an accession book, which gives you information such as a number for it, when you received it, what is in the accession, from whom you received it, what type of accession it is -- a gift, a donation, a purchase, whatever, a place to put down some nasty remarks about it and enter a catalog number.

A deed of gift form, great form. If someone gives you something, you get them to sign a piece of paper sometimes which signs it over to you. You then have legal title to it and no one can easily come and take it away from you. An accession folder, which gives you a place to store, with a number on it, all your other documents about where you bought that thing from or how you negotiated with the people for it, how they loaned it to you, or whatever.

And finally, a catalog number which must be affixed to each object in order to make the accessioning and cataloging system work so that you have accountability for those objects and can actually find both the object and the information about the object.

The information gets written and typed on to catalog cards such as this. It doesn't really matter exactly what kind of cataloging system you use. There are a number of them in the museum field.

There are other types of objects which may or may not be appropriate for your ship collection -- memorabilia. Here is a case of one which is obviously appropriate, Cassin Young's Navy sword. A patch designed and used by the crew members of the ship in the 1950's, sold in the ship's store, used on jackets and so forth. Appropriate according to most any scope of collection statement I can think of for that ship.

Let's go back to that one. There are so many types of objects that are appropriate for this type of ship. Part of the responsibility we have is to preserve them and properly store them, hopefully not in shelves which are leaning over and about to fall on someone. A little better storage, the original service from the Cassin Young in shelves in specimen cabinets,

which store them very well until we either find a place aboard the ship or in another display area to show them to the public.

You see some of the variety of types of objects related to the Cassin Young in our collection. On the second shelf from the bottom on the lower left, that thing there, a light bulb. And believe it or not, the Navy uses different types of light bulbs from the rest of us. So we took one and put it into the museum collection so that in the future we will know what the light bulbs look like.

I do draw the line, however. I don't know the proper name for these things. I call them widgets. They are used in the flag bags to connect part of the system for connecting the signal flags to the flag bags. Here you see a whole group of them on a table after they have been treated, getting the corrosion off them. I don't include those in the collection. I may regret it.

Another example of working parts, as I think of them, a lifeline and turnbuckle. These are very important for keeping people from falling off the edge of the ship, getting wet in the cold water, filing tort claims, injuring themselves, losing our visitor count and so on. So we try to provide for visitor safety.

We replaced all the lifelines and turnbuckles, and this business called "snaking" on Cassin Young. And Strafford Morss was very right in helping us make those kinds of decisions. But we did keep some turnbuckle examples and examples of lifelines and put them in the museum collection so that 100 years from now, we might know what the originals actually looked like. They have changed since the originals of the 1950's, even.

An obvious example of working equipment that you can't possibly hope to preserve and use at the same time. The ship's moorings, the mooring lines. You don't really want the ship floating away. Another example. We have seen it before. These infamous hoses, fire hoses. This is a modern example of one replacement that we have been using for display. And now a sample of one that came with the ship. It is getting to a point where it's inappropriate in its appearance for display, also is going to deteriorate completely here on the external part of the ship. So, it's probably time we took that one off and put it into the museum collection also.

Historical documents, another sample of a historical photograph, in this case a slide. Where you see those flag bags, the flag bag back there and the flags in it and the little widgets, and it shows you

what people were doing aboard, how they dressed and so forth, and even a detail like the non-skid deck plates there on the 01 level, whereas you look down on the main level, the same period, 1959, you see a non-skid paint, surface painted in a line along the right-hand side of the ship. So, they were using different types of non-skid apparatus on the decks at the same time. It helps us know how to incorporate the historical safety features of the ship on the display today.

Our earliest known photograph of the interior of the commandant's house. This one dates to 1918. Gets us back to the analogy to the historic house museum.

Bringing us up to 1959, again, the period room type of situation, here showing us activity that took place on the ship historically, a reenlistment, plus Cassin Young's sword. We find out that was in fact displayed on the ship during the historic period.

Someone was nice enough to take slides for us of the ship's office showing us the calendar and the typewriter and the chair and the books that were there. These same books, you can barely see them in this slide, but we have them in the ship's collection. They are now stored in another building, but they're very valuable to us both for display purposes and for

documenting what was aboard the ship, how it was maintained and how it was used.

Another type of material. Here is an example of operational archives relating to the ship. Both blueprints and loose and bound documents in the thousands are in the collection, and we actually have managed to get them indexed, just an index card. They are indexed both by subject and number.

Finally, oral history tapes, which are in the museum collection, an excellent way of recording and documenting information.

So, just to recap all this. A World War II ship is kind of a massive undertaking, and it tends to overshadow the curatorial responsibilities, and sometimes the standards for curatorial work on historic ships lose because of that, there is such an overwhelming project that we don't get to those details. You say, "Why do we have to do that?" But those ships are in some ways like historic house museums. They have fixed, relatively fixed parts and parts that are not so fixed and parts that are working parts that you really can't hope to display and preserve at the same time. You have to make your decisions in your scope of collection statement, what aspects, what objects you are going to put in the

collection, what types, and what types you are going to let go.

The importance of documentation of both the exterior and interior parts of the ship, a thorough documentation system before you undertake major work, even if you have already undertaken major work -- document it now. It's like documenting a 1797 ship in 1840. It gives you a lot more information than we have available today.

Document the changes, exterior and interior, as you go along. Decide what's going to be in the museum collection. Document that. And parts like boats, try to determine where you are going to display them so they don't sit out here trying to undergo stabilization and actually rotting. It seems like a lot of work, but try to preserve the museum collection through proper storage and protective measures. Consider, of course, other forms of documentation -- tape, slides, photographs, and so forth. And if it does seem like a lot of work, there are systems to help us accomplish it. If you believe that the resources themselves are valuable to us and to the nation, then I think we have to decide that that work is worthwhile.

Thank you.

[Applause]

MODERATOR McGRATH: Thank you, Peter. I think we have the emergence, perhaps, of a dialogue, of reaching a consensus on guidelines that museum needs don't have to be contradictory to the needs of the ship and the needs of seafaring people.

I have one more speaker to present to you this morning. I'd like to move right along. This is John Maounis. John, when I first approached him to talk on this subject, squirmed a little bit and was apprehensive. But we do need to all talk to each other. We have just seen a demonstration between Strafford and Peter that I think speaks for itself.

So, without further ado, I'd like to introduce our next speaker. He is our supervisory curator here. He is also, obviously, a museum person, John Maounis. He is going to discuss Standards for Interpretation Aboard Museum Vessels.

[Applause].

MR. JOHN MAOUNIS: Actually, I am still squirming. I had some slides that I was going to show, but I decided to dispense with them, since we have seen so many of them already today.

I think, more than any other aspect of historic vessel preservation, it is their interpretation that provides the greatest impact and

potentially a meaningful visitor experience. The opportunities and problems associated with vessel interpretation have produced all sorts of responses from floating museums to minimally-interpreted vessels, from interpreter-led tours to self-guided tours to the little white phones that people hang on their ears.

I am going to basically speak theoretically and somewhat abstractly rather than trying to give you some real techniques. I think it would be presumptuous of me to try and tell you in a few minutes what I think about interpretation of historic vessels.

What I am going to describe to you, rather, is a process and the standards by which interpretation can be developed and implemented. Yesterday, Peter Neill told us with, I think, some irony that interpretation is deadly in most maritime museums. I agree. Historic vessels have most often been preserved and interpreted by people who are dedicated specialists who have not really worked in the broader context of historical museums, historic sites, and I think therefore maybe don't understand or can appreciate some of the points, for example, that Peter just made. Because of this, the interpretation of historic vessels has usually been taken as sort of a unique case for which there are no precedents, no lessons to be learned.

We can all do a better job of interpreting our historic resources by looking to historical museums and historic sites for guidance and planning and implementing interpretive programs.

In the discussion of interpretation, the first question I think we should ask ourselves is: Why should we interpret the vessel at all? I don't think it's enough to simply say that we must interpret. I think we have to ask ourselves that question. And if we can't answer that question, then we probably shouldn't be interpreting. We need to answer that question not only as to our specific objective -- what is it specifically we hope to accomplish -- but as to sort of the philosophial reason for interpretation.

I'd argue that preservation is not simply salvage and the technology of restoration. Rather, it includes the presentation and interpretation of a vessel as to its meaning and significance. Without this, preservation is a fruitless exercise in self-gratification.

We must also then define the question of interpretation as to the specific objective we seek to accomplish. This is imperative if the interpretation is to be coherent and effective. Effective interpretation will provide the context for the vessel.

Whether the vessel is afloat or out of water, interpretation can provide the means for understanding the vessel, its significance and it's history.

Historians of material culture have made it clear how little we as a people actually know about historic museum objects. As a people we are essentially illiterate when it comes to understanding the significance, design, construction, technology, and use of historic objects. This is nowhere more true than with historic vessels which are, to a very great degree, massive, unfathomable, imponderable historic objects. Very few people can read artifacts -- very few people can read ships, indeed -- because few have ever been trained to do so. It is thus the mission of interpretation to provide the context and some of the information whereby visitors can come to understand historic vessels.

I think it's important that we take the broadest possible view in defining interpretation. There are many diverse elements that should add up to an interpretive program. These can include: interpretive panels, or wayside exhibits; fuller-scale exhibits; interpretive tours; environmental living programs; guidebooks; brochures; printed tours; demonstrations; musical programs; festivals;

commemorative plaques; historic furnishings; living history and/or historic dress; slide shows, films, vidoes; and ongoing maintenance and preservation.

Each of these elements of interpretation has its own unique way of communicating to the visitor. Each has its own degree of effectiveness. The most effective visitor experience will be had through a carefully considered combination of some or all of these. What is called for here a multi-media approach. And I don't mean banks of slide projectors and sophisticated dissolve units, but rather a program that uses the advantages of the various interpretive media to provide depth through layers of meaning and access. By providing multiple points of access to the artifact, we ensure a greater degree of comprehension on the part of the visitor. Interpretive panels in conjunction with interpretive tours in conjunction with brochures or handouts in conjunction with demonstrations has a much greater chance of success than any one of these media alone. Inevitably, not only is the level of comprehension increased, but the visitor's experience is greatly enriched.

Implicit in this multi-media approach -- in fact, implicit, I think, in interpretation generally -- is careful study and planning. So I'd like to describe

a sort of standard approach, at least in the Park Service, to the development of an interpretive program.

The first step in interpretive planning, if it has not already been undertaken, is the preparation of what in the Park Service nomenclature is a historic resource study. This should be an exhaustive study of the history of the vessel and a thorough history of its type, expecially if it's a representative vessel. Such a study should be prepared by a professional historical staff in conjunction with curatorial, preservation, interpretive, and other appropriate staff.

Professional historical standards should apply here as with all historical research undertaken in conjunction with preservation and interpretation, including an objective review of all sources, particularly an exhaustive review of primary sources -- archives, manuscripts, logbooks, journals, oral histories, plans, drawings, and other historic renderings, and historic photographs.

The historic resource study should pay particular attention to potential interpretive themes and define and delineate these. Interpretive planners tend to dislike the fact that it's ultimately the historian that sets the tone for interpretation, but the interpretive planners, interpreters, and curators

have their shot a little later on in the next step, which would be the preparation of a plan for interpretation. This plan should focus on the interpretive objective and take into consideration all potential aspects of interpretation. The plan should consider each of the interpretive themes identified in the historic resource study and thoroughly develop those that make good interpretive sense.

It may not be possible to develop and implement certain themes, since collections may not be available or media may not be appropriate for the interpretation of these themes.

As with the resource study, the interpretive plans should be researched and developed by professional staff -- specifically, in this case, curatorial and interpretive staff -- in conjunction with professional historical staff.

The next step would be a detailed compilation and analysis of the evidence of furnishing and use of the vessel. Again, in Park Service nomenclature, that's a historic furnishing report. This historic furnishing report should especially address those areas proposed for refurnishing. Three key elements are: A statement and justification of the interpretive objective to be achieved by refurnishing the vessel; a

statement of all evidence relating to original furnishings; and a detailed proposal for implementation of the refurnishing plan. This report should begin from the assumption that the vessel and its furnishing are only one source of evidence of historic furnishing of the vessel. In other words, it can't be assumed that a vessel's furnishings as received are in any way accurate.

What I have described so far is a very formal planning process, one might say a bureaucratic process. The importance of much a formal process, whatever form it actually takes, is that the decision-making process for interpretation and furnishing is clear and implicit in the process. The decisions and evidence on which those decisions were based is documented and preserved for future generations of maritime museum professionals.

A few other issues that should be considered in the planning for interpretation include the following. All interpretation should, I believe, convey the primary value of the historic vessel and the importance of respecting its historic integrity. This can be accomplished through any number of means. One that can be extremely effective and yet is often ignored or is seen as an unwanted burden is

interpretation of the ongoing work of maintenance and preservation. We should be be actively interpreting the work of keeping a vessel afloat. The vessel can come alive. It should make the job of interpretation vital, dynamic, and, most of all, real. Interpretation of work can aid the visitor to understand the technology of the vessel and the imperative of maintenance, both in historical terms and in present-day preservation terms. Formal interpretive panels can provide information as to the types of skills and work necessary to keep a vessel afloat. Equally important is the informal interpretation provided by the deckhands and shipwrights while they are working. The deckhand and shipwright that have the greatest potential for providing a positive experience, especially considering that the vast majority of visitors to historic vessels, at least in our experience here, do not not partake of a formal interpretive tour. Even when they do, visitors spend considerably more time wandering around without the assistance of an interpreter.

Interpretation should ensure that visitors understand clearly the relative integrity and quality of the vessel. We should not mislead the visitors about the reconstruction or massive restoration of a

historic vessel or the substitution of replicas for original objects. Historical museums, historic sites and historic vessels "are often filled with unconscious anomalies suggestive of changes between the recreated historical era and the present day: synthetic lines, electric tools used in the maintenance of the vessel, electric lighting below deck," et cetera. We "should call public attention to these historical anachronisms and, in turn, encourage visitors to scrutinize every recreated environment aboard ship with a similar perspective." I think it can only add to their understanding.

A historical vessel should be interpreted according to its particular significance. Is it important because it is representative of a type of vessel or because of its unique history or association? The interpretive implications of this difference should drive the content of the interpretation.

Interpretive activities of all kinds should not overshadow the historic vessel or be so unrelated to the vessel that visitors remember the presentation rather than the purpose of the presentation. All too often, in our zeal to provide as much information as possible about the vessel -- her history, her trade, her type, the technology, maritime history in

general -- we lose sight of the impact that this may have on visitors' experience. If what is remembered most are the exhibits or, what is worse, if the exhibits, gift shop, or other adaptive use intrude on the visitors' experience and provide a confused or even incoherent experience, then the interpretation is unsuccessful.

In planning for interpretation, the distinction should be made between the kind and level of interpretation that might be provided in a shoreside museum versus aboard ship. It might be decided to simply interpret the empty space inside a ship, even the vast, unused, uninteresting space.

Preservation and interpretive policies should, I believe, discourage memorial markers on historic vessels. I appreciate Peter's point about it being a point of access into the history of the vessel, but all too often, and I am sure there are plenty of people out here who can tell us their own experiences, where that tends to become a burden. Everyone wants to put their memorial marker on the ship. Perhaps instead of an actual prohibition of such markers, a procedure for clear, thorough justification and demonstration of need of such markers should be part of the policies of the institution managing the historic vessel.

Finally, I would just like to mention one aspect of interpretation that I think is all too often forgotten, and that is setting the context for the interpretation. The location, the moorings, the pier, the approach to the vessel have a significant impact on the visitor experience and should be considered in that light. The approach to vessels can lose more potential visitors because they are unattractive or lost amongst other activities. Ticket booths and signs are equally important to beginning the visitor experience properly and positively.

That is really all I have to say. I have decided to dispense with the slides, but since we have plenty of time left over, I will entertain questions.

[Applause]

MODERATOR McGRATH: Thank you, John. We do have some time, so we will open this to discussion.

I am going to introduce Captain Wilson. He is the master of the Jeremiah O'Brien. I'd like to introduce him, and he would like to make a few more comments now formally before he begins his tour, and then we have a coffee break scheduled at 10:15. After Captain Wilson has finished -- he is a very gracious host. The O'Brien group has allowed us on board. I'd like to thank him now for that. We will have a

discussion, and then have our coffee break. Captain Wilson.

[Applause]

MR. WILSON: Thank you. There is one thing you never do on a merchant ship. Never. And that is, delay the coffee time.

[Laughter]

MR. WILSON: You want to get in trouble with the crew, just try it. I want to welcome you aboard the Jeremiah O'Brien. I want to thank the Park Service for the opportunity for you people to visit us.

This is the last operating liberty ship out of a total of 2,753 that were operating during World War II. This ship is fully operative. We cruise every year around the bay. We are scheduled now to go to dry dock on September 14, thanks to the Continental Maritime Association and their new dry dock.

I want to take you people around the ship and show you what we have accomplished. I'd like you to bear in mind that this ship layed in Suisun Bay for some 36 years with all the port holes open, all the doors open. It was one mess of mice, rats, sea gulls, and rust. So, it was a lot of work getting it done, as you can see right here in No. 2 upper 'tween deck. So let's wait and take the cruise.

Thank you.

[Applause]

MODERATOR McGRATH: We have ten minutes. I'd like to ask Strafford, John, and Peter Steele -- we don't have a formal table to sit around -- but if you could all come up here and entertain discussion from the group and questions. Once again, I urge you, prior to asking your questions, please face our transcriber, identify yourself, identify who you're asking the question to, and then ask the question.

Thank you.

MR. HERMAN SUDSHOLTZER: A question of interpretation versus curating versus demonstrating what life on board was like. Probably all three of you. You showed a slide of the ship's office on Cassin Young. Those books are now locked up with a tag on them, and I accuse Peter of "curatoritis." And not here, but I have in the past. Where you take something and put a tag on it put it in a cage and squirrel it away, and it's yours, never to see the light of day again to all people who visit Cassin Young.

You can look at the ship's office, and there are some typewriters sitting there, chairs sitting there, bookcases are empty. There is not a piece of paper or pencil or anything else that a yeoman working

in that ship's office could have used.

How do you get by the fact that he has to interpret this space. He has to explain to the public what took place in this space, how cramped it was with three sailors working in there on a rolling ship, the books coming out of the racks, the captain screaming because he wants a letter out -- that doesn't come across in an empty ship's office.

How does the interpreter solve that problem with the curator doing what he's doing.

MR. JOHN MAOUNIS: We work together.

MR. PETER STEELE: I'd like to respond to that and say I agree with the thrust of your question, and I accept it as a criticism. There is no reason in my opinion that those books should not be on display. It is simply something we haven't gotten to yet. And we will do it. We just haven't done it yet.

MR. HERMAN SUDHOLSTZER: The books ought to be preserved. The shipboard environment doesn't lend itself to preserving valuable records, which they are.

MR. PETER STEELE: That environment is practically as good as the environment in which they are stored now. It's true, that they should be in a more controlled environment. We would have to take that into account. But I am not sure that we couldn't

provide them adequate protection on board ship. I am not sure. We would have to look into it, but I am not sure we couldn't.

MR. HERMAN SUDSHOLTZER: Does the controlled environment like they have on the Massachusetts aid considerably, you know, temperature controls and so on?

MR. STRAFFORD MORSS: Aboard Massachusetts, we really, while we have temperature controls, humidity control, if you will, is by accident.

I think that there is something that we have to consider, and it is something that I picked up from reading Admiral Wallen's book on the salvage of ships at Pearl Harbor, that if you have all your storerooms -- and I am going down below from the ships offices and administrative spaces -- but if you have your storerooms filled the way they were initially, should you have a flooding casualty -- and on Massachusetts in 1959, I had to remove 384 tons of water from her that came in unbidden -- if it gets where you don't want it to go, outside of the torpedo protection system, into the working spaces of the ship, you then have the possibility of a very dangerous situation -- the decomposition of paper, materials of that nature, let to go much of any time at all submerged in salt water will make it a colorless,

odorless, very deadly gas that will wipe out the first couple people who go to play in there.

So you have to be very careful from a safety and a ship preservation point of view on how you arrange the ship for interpretive accuracy. I think that from the point of view of storerooms, you have to be particularly careful.

On Massachusetts, regarding historical documents, we've got often a great many copies of the same document. There are more than 75 copies of the ship's organization regulation manual. I have seen more than ten copies on display of fleet gunnery exercise manuals. So, probably we are doing pretty well there. Of course, some of them happen to be in spaces that had no business having these books in them to begin with. But it helps to make the spaces look as though they're somewhat more realistic.

I don't know if that answers your question, Suds.

MR. DAVID WALKER: Peter, what is the status of Cassin Young? Is she open to the public as a museum?

MR. PETER STEELE: Yes. She is open to the public, was opened in 1981.

MR. DAVID BRINK: A question for all three of

you, one that we have been debating for some time.

With the exception of the store-bought variety, how about mannequins, real, museum-quality mannequins?

I would like the question answered by all three of you.

MR. JOHN MAOUNIS: I will take a shot at it. I think they are deadly.

MR. PETER STEELE: They scare me.

[Laughter]

MR. STRAFFORD MORSS: As the minority report, we do have some mannequins, for instance, down in the sick bay area, in close spaces, demonstrating what might have gone on in those spaces. We have gotten some positive instinctive reactions from visitors looking inside and seeing these people with the moulages indicating an injury.

We have discovered that in a number of spaces we can go just so far in recreating the space into the condition it was at before we discover unauthorized use of the space for purposes not quite intended. I will leave to your imagination what happened, but it was very difficult.

[Laughter]

MR. JOHN MAOUNIS: One other thing, David. I

think mannequins are deadly in particular because interpretation is imagination. And you really have to inspire the imagination of the visitor. One can do that in various means. I think that something like mannequins define a little too unrealistically the people and the setting, and that there is therefore much less -- one's imagination is much less able to operate.

MR. PETER STEELE: I have a further comment on that also. You are not going to get off this that easily. I don't think there is any problem necessarily from a preservation point of view with mannequins. It tends to be kind of an intrusive, interpretive media, though, where you begin -- it's very easy and natural to start wondering about the mannequin. What's it made of? Is it real? How did they do this? As opposed to what it's doing or what it's trying to say.

MR. STEVE HYMAN: Addressing what David referred to, I don't know how many of you have been to the transportation museum in Galveston, but there is an example of mannequins that I think are very effectively used. They are white plaster figures. There is no intent to portray them as real people. I think it creates a very lively environment for the imagination. But that wasn't the main thing I wanted to say.

I wanted to say that I was relatively envious of my colleagues here to have the opportunity to work on a World War II vessel where they have access to not only the crew that sailed them in the historic period, but often builders and designers of the vessels as well, so they can authenticate the work they do, relatively minor materials and methods.

One of the things that people keep referring to is the similarity between houses, shoreside structures, and vessels. I am extremely concerned with that. I own a house that was built in 1893 in Eureka, California. That house was vacant for two to five years before I purchased it. I put a new roof on it, did some minor structural work, some electrical repair, threw up some sheetrock, painted it. It's basically a sound, well preserved structure.

If I were to walk away from the Thayer for two to five years, we wouldn't find the same situation. Peter Steel, perhaps you would comment.

MR. PETER STEELE: Well, I think the whole area of structural preservation, you can really go on at great lengths about the similarities and dissimilarities between vessels and shoreside buildings. My comments, though, were directed really solely at the curatorial aspects of it. I don't think

that answers your question completely, but I don't think we have time to get into a major vessel versus shoreside structure discussion. I am not going to attempt to, anyway.

MODERATOR McGRATH: We have all day. Karl Kortum.

MR. KARL KORTUM: I just wanted to make some comments on the mannequin issue. I did want to discuss what has just been said about white mannequins. I saw some buff mannequins at the Monterey World's Fair in the British exhibit there, and they were kind of made out of an almost alabaster-type material, and they were not offensive. They didn't attempt to be human beings, but gave a sense of scale and kind of a machined component. So I don't think we can be categorical about rejecting mannequins. I am not terribly in favor of them. I think they should be very sparingly used, maybe two or three per vessel. On a vessel like the Balclutha, that you might have three at the most or four.

And another interesting aspect that I have noticed, when they're made realistically and dressed realistically, they're fairly good devices to have them looking the other direction. It's the face that gets you. I think they can add something to the exhibit.

MODERATOR McGRATH: Okay. Thank you very much. I think we are going to have to end the discussion now. We have a coffee break. I'd like to begin Captain Wilson's tour precisely at 10:15.

[Whereupon the session adjourned at 10:15 o'clock p.m.]

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TUESDAY, SEPTEMBER 3, 1985 4:00 O'CLOCK P.M.

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MODERATOR McGRATH: If I could have everybody's attention. We have asked Walter to expand his topic a little bit, and I hope you'll all bear with us. Walter has graciously agreed to cover in his topic, as well as Standards for Replicas and Reproductions, because there an involvement in replicas and reproductions with sailing them, to cover some of the -- and perhaps this is a good point of departure. We in the Park Service seem very familiar with the word "standard." Perhaps I should suggest we talk about guidelines. "Standards" seem to indicate some sort of superior authority laying down the law. "Guidelines" help people, and that is what we are trying to do. So, Walter has agreed to discuss very extemporaneously guidelines for working historic sailing craft as well in his talk. Following that, if we have discussion time, I'd like to ask David Brink if he'd like to moderate a session with the panel, and we can discuss the proposed guidelines that have been passed out. We can have some discussion and make any sort of modifications before we meet again at the end of the day tomorrow.

Without any furnish ado, Walter Rybka.

MR. WALTER RYBKA: The topic I am covering this time is Suggested Guidelines for Replicas and Reproductions. Just a word about the difference between a replica and a reproduction. I would guess that I accept the definition generally given, that a replica has to be exact, where you have the known details of the vessel or small craft, and you are going to duplicate it exactly in every way. That can be called a replica. If it's, let's say, a general representative of the type, it's more accurate to call it a reproduction. I accept that difference, and I think that is fine, but that really isn't what I am going to talk about very much.

I am really much more concerned with the purposes for doing either replicas or reproductions. I think the chief argument for it is that the whole process of maritime preservation, I view as one of preserving culture. These are cultural resources. The artifacts, the old ships are a cultural resource. Well, the processes are a cultural resource -- the continuum of knowledge, maintaining that, preserving the skills -- all of those things that continue on are preserving the culture.

Now, if you are restoring a ship, that preserves that process with the rebuilding, and the

process is as much the product as the end result in the ship itself. Now, if you are building a vessel, you're preserving that process, and you have several added advantages. No. 1, you don't have to start by tearing an old ship apart. You don't have to solve somebody else's problems. And you are not left with an old boat after all when it's all done. So that is one very important advantage.

Another tremendous advantage is that in new construction, you're starting right out approaching it the same way the builders did in that you are starting with new construction, you are starting to expeditiously arrive at a working vessel. In restoration, you are very often called upon to solve problems the builder never had to solve, simply because, if the ship was in that bad a condition, they would have said, "Why bother with it. We're building a new one." Now, of course, we can't afford to do that. It's all we have left. So, restoration is a very exacting process, and a lot of times you are not approaching it with the same thought or maybe don't come up with the ideas or learn the same lessons that somebody who just set out to build the ship would go about and find to be an expeditious or an easy way to do it.

There is also, in replication, there is room for some experiments in terms of choosing a type, choosing a rig. You can decide, "Well, this looks interesting," or "This will fit our purpose, so let's build this vessel," as opposed to having a surviving vessel that is this type of type for a restoration, if that is all you have, or, if it is historically significant, you restore it, you interpret it. But it might be that another type of fishing vessel or another type of cargo vessel would be much more typical or much more usable if you opt for a reproduction. You can then explore the uses and the sailing of that vessel.

Another tremendous advantage to reproductions is that, in general, they're low-cost projects because they are usually smaller vessels. Now, obviously, if you set out to try to build a large vessel as a reproduction, that wouldn't be true, but most reproductions are relatively modest in scale. And this means that their costs are usually in six figures as opposed to seven. That is a tremendous advantage.

Another tremendous advantage is that while there are some very legitimate arguments for not sailing historic vessels, for not placing original fabric at risk, for not taking those chances with an old vessel, I can conceive of no excuse for not sailing

a new vessel. Unfortunately, that sometimes happens, where a vessel is built for reproduction purposes for display only. I think that is a tragic loss of potential. I think the value of any artifact or object lies in what it has to teach.

Now, interpreting ships is very, very difficult. Interpreting almost anything can be considered difficult, and it is, because there is so much wide range of knowledge to impart. But with ships, I think it's particularly difficult because all of the conditions that is dictate the design of the vessel are invisible when the ship is alongside the dock. A building that has been converted for other use or is now a museum, it's got walls and a roof, and you stand on the floor and it's still behaving like a building. Now, a ship, the reason you have to step over coamings is to keep the water from sloshing down below. The reason there are handholds and grabs all over is because it might be over 15 or 20 or 40 degrees. All of those things are possible to interpret, but they don't occur to people right away. If you can get people out sailing, you're sharing the experience, you are spreading it around. The ship is more understandable.

Interpreting a ship that is standing still is

kind of like interpreting a violin that cannot be played. You can interpret the building of it, the craftsmanship, its role in the culture and the orchestra, but the most important thing about it is the sound. So, if at all possible, building ships to get people on the water, to share that experience, to continue that process of passing the knowledge on, I think that has a tremendously valid role in historic preservation.

Reproduction as an avenue for skills preservation. Another part of skills preservation is using it, as well as building it or maintaining it. Now, construction is the easy part, I think. And I am going to spend the least amount of time talking about that, because there is a very analogous situation towards what I mentioned in restoration yesterday, that the process of restoration, however difficult, is merely the price of admission for how you make it work afterwards.

Well, I think in reproductions, the standards, or the guidelines, ought to look perhaps more at the program, or the end use, than what boat you build or what the details of it are. However, in building the boat, I would recommend that to learn the most, the vessel be authentic in rig and appearance. Maybe

substitutions in materials, but you really want to find out how this the particular rig worked, what was required to use it, what were the most efficient ways to use it, I would think that at least start out with the rig as designed.

I think building it out of good material is a good idea. Even though some boats and local types are very cheaply built, they were considered expendable items, I think that nowadays we find that labor is proportionally far more expensive, and you don't get a chance to do it again very often. So, I think opting for good coatings, good materials, a high standard of quality and construction -- if it's going to justify the dollars spent, it's a very small increase to do a good job as opposed to a mediocre one.

I also think that, in general, small is beautiful . . . meaning, let's say, vessels of under 100 tons as opposed to large clipper ship replicas or things of that nature, because if the vessel is small, there is not as much at risk. It actually has a greater -- what I am trying to say is that there is more chance of exposure to more people. You can have many more smaller programs working in different places and have a greater geographic distribution for the same amount of funds than concentrating it in one or two

extremely large projects. And I think keeping the boat affordable keeps the boat workable. I also think there is a tremendous advantage for really small craft programs in that, throughout history, I think the overwhelming majority of human experience on the water has been in small craft as opposed to large ships. It's just a part of the human experience that we don't deal with very much any more.

And also in terms of teaching all of the things that we want to maintain for use of vessels, whether it's dealing with wind and tide, responsibilities as a crew member, the teamwork that is required, the discipline that is required, whether it is beaching a boat in the surf or shortening sail on a larger vessel, I'd say that probably 90 percent of what there is to learn about seamanship and human work on the water can probably be learned for about the first ten percent of the cost of a large vessel project by starting out in pulling boats and small boats and making that a general part of the educational experience.

Now, I'd say the most important thing in a reproduction project again relates to the planning of restoration projects, and it's to have a clear objective and a plan for end use. The project has to

be sustainable in the long run. To have the program designed first and the type of ship picked later makes a lot more sense than arbitrarily picking out a boat and then, after it's built, saying, "Now, what can we do with it?" Because the boat might not be ideal for what you can possibly do or what your options are.

An example of that is boats that are built for certain commemoratives, like the 350th anniverary of Jamestown or Columbus anniversay. There is always a few little caravels built, and then, afterwards, they sometimes rot at a dock because nobody figured out beforehand what program is going to make use of the boat steadily through.

At this point, I would like to compare several different projects, not so much by the design or construction or choice of the vessel, but by how the program runs. This is what I would like to use the slides for. Could I have the slides, please.

This vessel is the Dove. She is a reproduction of the 17th century Pinnace that accompanied the vessel bringing the first settlers to Maryland. The Ark and the Dove were the first two vessels over. The Ark was a much larger vessel that had about 130 people on it. The Dove only had 11 on it. I sailed in her with ten and she is desperately

crowded at that. She is about 60 feet long. She was built, beginning to be built in 1977. Here is a project that -- one nice thing about these smaller vessels is that you go through all of the same traditional steps of sawn frame construction, frame up, ceiling knees, all the members, but it's on a size that is quite small, quite affordable. It's a project that gets done in six months instead of six years. Quite a good job was done building this vessel. Jim Richardson, who is quite a well known eastern shore Maryland boatbuilder and small ship builder put her together. A lot a white oak went into her. The rigging, the first go-around on the rigging hadn't been all that well researched. A lot of it has been replaced since. But they actually got quite a well put together little vessel out of it.

This is where she is displayed by St. Mary's City, which is a historic recreation, some rebuilding of old buildings, some new construction on the site, and some archaeological work on the site.

This is where she sat for some years. This is a project that almost failed, or a vessel that almost failed. The ship was built, I believe, as a bicentennial project, didn't get off the ground for that year, was done the next year, and sat at the dock,

occasionally being taken out sailing, but no regular program for use. Well, then there was was no regular funding for the program. The vessel sat for a long time. She didn't get hauled out for two years. She had her bottom paint rubbed off on the camel she was laying against. The camel was worm-infested. The ship got worm-infested, started springing leaks. When the vessel was less than five years old, had to go back to the shipyard for a substantial portion of bottom replanking that was over $50,000, or a little more than half the construction cost of the boat that was less than five years old.

Subsequent to that time, they hired a captain who's been with her for two or three years. His name is Erick Speth. He had been mate on the Pride of Baltimore and was also chief carpenter on the Elissa restoration for the last year. He's worked very hard at turning that ship around, getting her decks tight, getting a volunteer crew to come down regularly, working out a program of port visits. She cannot carry passengers for hire. She is entirely authentic in her below deck spaces. There is not a single light bulb on board except a flashlight.

But she is small enough that she can be very easily used, and all of the traditional aspects of

square rig seamanship are involved -- going aloft, tacking the vessel. Here she is going about in the St. Mary's River. She is really an amazing little thing to sail because she will tack so smartly and quickly. Doesn't make any ground windward, but she does come about, so you can at least get going in the other direction pretty rapidly.

This gives people a tremendous opportunity for going through that drill of bringing the ship about. Mainsail haul and let go and haul. It's that language of sail, the process of using the boat. It can be done cheaply. It can be done often. It can be accessible to a lot of people.

Now they do about a month's worth of cruising in the fall. They go out every couple of weekends throughout the summer. The vessel can be downrigged in about a day for the winter. The whole program probably doesn't cost more than $100,000 a year, which, in terms of a program, is really not very much. For the outreach they get, it's not very much. The vessel can be maintained easily for a very long period of time.

So, in that sense, the educational possibilities that such a vessel offers relative to its cost of construction I think is a real bargain.

Now, here we have another little vessel very

similar to the Dove. Most of these square rigger reproductions tend to be 17th or 16th century vessels, because they are the only square riggers that are small enough to be cheap enough to build.

This is the God Speed. She was built for Jamestown in Virginia, which was the first settlement. This year was the 350th anniversary of Jamestown, and they wanted to reenact the voyage over, so the vessel was put on a container vessel in a down-rigged condition and sent over to England, and then they rerigged it, and here she is in St. Catherine's Dock in London. Very small, even a little bit smaller than the Dove. They had modern navigational aids on board which were powered by a small generator, but they didn't have an auxiliary engine in her.

This project was one where it was primarily aimed at a large amount of publicity. The crew were gathered by seeking resumes in the mails, was kind of a mail-order crew. The captain and crew had not worked together, had not practiced with sailing the vessel, were not familiar with the vessel before they left, and they left on a rather difficult passage to clear the English coast. Fortunately, they did all right, and they didn't have any real problems. There were no accidents. The vessel wasn't damaged. No lives were

lost. But by the time they reached St. Thomas, nobody on board was speaking to one another, and the whole crew walked off the boat, and the boat has been sitting in Puerto Rico for some months, and Colonial Jamestown has missed their anniversary and their celebration and has to figure out how to get their boat back.

[Laughter]

MR. WALTER RYBKA: Now, that is extremely unhappy. Fortunately, there were no accidents or no injuries out of this. But it's a matter of not matching the use to what the vessel is really suited for. If you have a very small vessel of a type that is not sailed very often now, that there is a lot to be learned in the operation of it, it makes far more seamanlike sense to work out a program to sail it up and down the coast or to give it more visibility to more people and more port visits and do a lot of small trips, and maybe after six months or a year, whatever, everybody is working together, there's a tremendous amount of teamwork, well, then maybe think about a larger passage or an off-shore passage. But when the promotional ideas ran ahead of, let's say, the practical ideas or the long-term ideas of even after the celebration, when they get it back, then what gets done with it? None of that is addressed, and there is

a high potential for failure -- no matter how well built a ship it is.

Here is another vessel that is quite well known, Pride of Baltimore. This vessel was built as a bicentennial project. But the corporations and the city of Baltimore contribute to its sailing. It's built as a Baltimore clipper type, which means it's not at all capable of carrying passengers for hire, will not meet stability criteria or many other criteria for a vessel to be able to do that, so it sails with a professional crew only. When it makes port visits, the corporations who have funded it will rent it for parties for entertaining their clients. They have managed to keep the boat sailing year after year after year.

Even this vessel has had some problems, primarily caused by the fact that it was built in a tremendous hurry, and they were running short on time and running short on funds, and so a certain number of things were done to it that weren't all that well built, and that, of course, caused problems and had to be subsequently redone. That is a tremendous damper on her operational budget. They had to put a new deck on the year before or last winter. They would like to do some replanking to the hull.

Inherent in this type is short longevity. I mean, Baltimore clippers are extreme vessels with very tall masts working through a very short couple on to the keel. The barry of the mast below deck is extremely low relative to the height of the rig. These vessels were never expected to last more than ten years. They were expensive to operate, a lot of chafe involved, high need for manpower. In fact, they were only sustainable in blatantly illegal trades like privateering, piracy, slaving, smuggling -- anyplace you needed a fast boat and cost was no object, and if you lost the boat, it was cheaply built, so it wasn't that big a deal anyway.

So, for a long-term sustainable program, if the primary object was to have an ambassador for the city that would go around year after year after year, perhaps it might have been a better idea to choose another representative type. On the other hand, there is no vessel that has the romance of the Baltimore clipper to that extent that is native to that area.

This vessel is seen at the dock most of the time by the public. But for the crew that cycle through her, that apply to be her crew year after year after year, she offers a tremendous opportunity to learn things that can't be learned any other way, to

have those experiences, to pass that on, to, let's say, fully imbibe in that part of the culture.

While this is going on, there are a couple people there that are sewing the foresail, which is not up for that reason. It's still being worked on. These were taken by Erick.

Now, here is yet another program. This is the Clearwater, which is a reproduction of a 19th century Hudson River sloop. This boat was built actually in 1968. She is bulkheaded down below, has auxiliary power. She was built to conform to the requirements for passenger for hire vessel on inland waters, so she can carry passengers for hire. She can charter. She concentrates on educational programs of environmental awareness, and she has been operating very successfully.

Even in her case, after a few years of operation, the maintenance was inadequate and the vessel had some severe rot and required major rebuilding. Since that time, the maintenance program has been stepped up. It is dealt with very carefully. The boat is sustainable. It seems to be a really common thread that runs through a lot of these reproductions, that the vessel is built to the low bid or they run a little bit over and some shortcuts are

taken, and invariably it backfires within three to five years. All of a sudden, the vessel is exploding with rot and needs major rebuilding. People realize they are about to lose their vessel, so they do a tremendous amount of work, and all of a sudden the boat comes out of it, if it survives it at all, and all of a sudden there are crew on it, there is work being done on it, the maintenance gets pretty religious. It's unfortunate the lesson usually has to be relearned that way in project after project.

This another approach to a reproduction vessel, whether it's a non-complying vessel like the Dove -- but it's very small, so it doesn't cost much to operate -- a non-complying vessel like the Pride, but is capable of off-shore operation so it is fundable through corporate uses, or a vessel that has made compromises in its below deck arrangements so it will meet Coast Guard rule and can charge. All of these projects are sustainable if the program is worked out to do so.

Someone had a question?

FROM THE FLOOR: I was going to ask, where is that and what's the vessel in the background?

MR. WALTER RYBKA: This is at South Street Seaport museum in New York. And the vessel in the

background is the four-masted Peking.

I will come full circle to where I was yesterday and come back to the Elissa, because I can discuss other aspects of an operational vessel here and learning processes. The Elissa is a restoration, but it's kind of a borderline in that there is so much of a rebuild. When you're standing on deck, you're looking at so much new material that in many ways the Elissa might be or could have been perhaps a reproduction vessel.

In the Elissa's case, we relied very heavily on volunteers. Volunteers were an essential part of the restoration program. Probably ten to fifteen percent of the man-hours were put in by volunteers in the heavy construction phase. It was like a department, a Saturday department as opposed to the Monday to Friday, working in various trades. Most of the initial effort was by volunteer.

Now, in a museum phase, we cannot fund the crew the ship needs. To keep that ship in that condition, where it truly is operational, would probably take at least seven or eight hands. Originally she sailed with a crew of 13. But a lot of their time was taken just sailing the vessel. We only have a crew of three on board full time, and I am a

part-time consultant. And then there are the office staff and other people around. But the hands-on crew on board is only three positions. That is not half enough. So the other half has to come out of the volunteer maintenance work.

Now, the only way we get that steady level of volunteer participation of 15, 20 people coming down Saturday after Saturday is because the vessel gets used, the vessel sails. They're part of the crew. They can come down, take the training course. In order to sail the vessel, we have to run a dockside training program for three months prior to going out.

See, a lot of professional sail training programs, they have enough professional crew that they can sail the vessel safety short-handed until the totally green trainees can get into the working of it and can learn something about the boat. In our case, we have only one or two people who were, let's say, in the category of professional crew. The master comes in just before we go out. So the only safe way to address sailing the vessel is to make sure that everybody on the crew can handle all the lines, can work aloft, can follow all the commands. That takes three months of three to four hours drill a weekend.

In addition to that, it's all the hours that

go into tarring down the rig and and painting and reeving off running rigging and all those operations, maintaining this big engine that runs on air with all these moving parts exposed to the weather.

In our case, we view sailing the ship not as a luxury, it's an absolute necessity. The cost of sailing the vessel -- the added insurance, the lost gate income while you're out, the potential fees for towage, the master's expenses -- all of those things might add up to 16 or $20,000 for a year's sailing program. Sometimes it's less, depending on how much comes in gifts in kind. But if you look at getting ten, twelve, 14,000 hours a year, and you translate that into about 2,000 hours a year for a full-time position, that is the other four or five crew we can't hire.

So, in our case, it's a bargain. We spend anywhere from ten to $20,000 and we get $50,000 worth of free labor which I don't believe we could get with any consistency if we did not do this program, which means we could not maintain the vessel to this extent, which means the vessel would start going steadily, slowly spiraling downhill.

So, in our case, that is the program. The vessel is a museum. She is open almost all the year

except the time she goes sailing, but it's that week's worth of sailing that to us guarantees the survival of the ship, even though, of course, we are taking a risk taking her out sailing.

Now, to leave a little bit of time for discussion of sailing historic vessels, Elissa is a good point. There are some other candidates. Alma is a good example. Pioneer in New York is a good example. Star of India sailed one day last year and one day some years ago.

It's very difficult to have any hard and fast rules for this. If a vessel is, let's say, a completely intact vessel and you have a tremendous amount of historic fabric, I would think that that would mitigate against sailing the vessel or risking it unless it's under extremely favorable circumstances. In the case of the Elissa, we had something that was worth very, very little as a ship, with most of it missing, but worth a tremendous amount as an idea. In the case of a vessel like Alma, you have a vessel that has had a tremendous amount of renewal, more than once, and the vessel is relatively easy to sail and easy to maintain, if you had some people on it, more human involvement in it. So therefore I think for certainly a smaller vessel like that or for a schooner like

Pioneer, the benefits of using the vessel, gaining the benefits of use, of preserving the skills, of passing on the knowledge, of getting people involved, all those aspects of preserving the culture far outweigh the potential risks to one vessel that's already had most of itself replaced.

I don't think I would advocate trying to gear up to sail a vessel like Balclutha or sail a vessel that was in, let's say, fragile condition but was all original, but I think for many of these vessels, particularly a lot of these little schooners, the usage of them is the only possible way of sustaining them. A lot of them don't have that much appeal as a museum if they were off by themselves. Here maybe you have a fleet, a large institution to sustain it. In other locations, you take a vessel like the F. E. Morrissey in Massachusetts, it's a small vessel, relatively speaking. It's about 100 feet. It's a schooner that has had several different configurations in its lifetime. It was an 1890's fishing schooner, it was an Arctic exploration vessel, it was a Cape Verdes packet, a passenger vessel. It's now being refitted under Sailing School Vessels Act. It had substantial hull rebuilding in the Cape Verdes. It made it back to the states. It has since had auxiliary power put in. It

has had several several different engines throughout its career. It's a historic vessel, but it's a continuation of its career to continue sailing.

If you arrested that vessel at one point in time and said, "We are going to restore it as the Arctic exploration vessel or as the packet or as the fishing vessel and leave it," I don't know that you would have the revenues for a small vessel in an out of the way port to be able to sustain it. And you would start into that cycle of losing ground on the maintenance, losing ground on the fabric -- basically just losing all the way around -- compared to the benefits that can be had out of an active program, out of people going through, gaining the knowledge, gaining the experience and continuing on with it.

So, I think on sailing of actual historic vessels themselves, I recognize the risks, I don't want to recommend it as a blanket policy because I think it's inappropriate for many vessels, but I also think think it has to be considered that, for many vessels, I think it's their only hope of survival in the long run. It really is a "use it or lose it" situation with many of these vessels.

If the overall part of preservation is heritage preservation, is attitude preservation, the

overall part of it is cultural preservation, the use is as important as the having. And the knowledge is as important as the object.

I certainly think that building reproductions and exploring more the possibilities of having more access to people getting out on vessels and participating in it and caring about it is one of the best possible ways of continuing maritime preservation.

I think a lot of the discussion in the last couple of days have been, let's say -- one of the greatest lacks in the overall effort is a lack of appreciation, a lack of general public knowledge, and that comes back to a lack of advocacy.

There is a very small group of people in the country, and we are certainly in that group, that care passionately about these things. Well, part of the reason we care passionately about it or some of us who are most passionate about it are because we are the people who have had the experience of doing this. And if you want everybody else to care about it, the more people that have that experience, the more people are going to care about it and the more it's going to become part of the culture as opposed to an isolated little special interest.

So, getting people on the water and that part

of preservation as opposed to just object preservation, I think, is extremely necessary and needs all the encouragement it can possibly get. As a general rule, I think you ought to save the old ones and build the new ones and push them hard and sail them well. And that means designing and building them to fit the sailing school vessel regulations, if the Coast Guard ever gets around to finally making up their minds and approving them, so the vessels can be built, or as passenger vessels, or, if it's a small non-complying vessel, maybe working out a program that is affordable so you don't need the income. But get the vessels out on the water, get the people out on the water, and start out thinking about that as the end use. Then back up from there and figure out what boat you want and how big it ought to be or exactly how it ought to be built, but the program is going to make it or fail on just that, on the program -- on the planning, on the end use, on how well it's run, on what the curriculum is, on the area of operation, on the cost relative to the money available. That is where the success or failure is, far more than on whether it's this type of schooner as opposed to that type of sloop or whether it's built out of oak or whether it's built out of pine. If you build a good boat, there is a lot of

latitude there. But where most of these things fall down is after the boat is built and it's in use.

So, that is where I think the guidelines ought to go towards -- what's the use, how is it going to work, who is going to run it? All those things are perhaps more important than just how the vessel is built.

I would like to use the rest of the time for discussion questions.

[Applause]

MODERATOR McGRATH: Thank you, Walter. I would like to ask today's speakers -- Strafford, Walter -- to come up. I wonder maybe if Dana Hewson, who is going to be speaking tomorrow, might like to come up and join us. David, I know you had some items you wanted to discuss. We've got about 15 minutes.

Any questions or discussion?

MR. RANDALL BIALLAS: I will just say to Walter again, I found -- you're very articulate -- I might just point out, and I agree with what you are saying. We are dealing with historic objects. We really don't deal with preservation of cultural systems. And I certainly favor what you're talking about. This is a statement of fact, that the Park Service is not in the business as you described.

MR. HERMAN SUDSHOLTZER: Why?

MR. RANDALL BIALLAS: I don't know why.

MR. HERMAN SUDSHOLTZER: The Park Service is not into urban parks either. They're into natural resources, right?

MR. RANDALL BIALLAS: Yes.

MR. HERMAN SUDSHOLTZER: What are they doing with urban parks? You know, the Park Service's ambition has been expanded over the years. To say that the Park Service now is not into cultural systems like ships are -- why can't the Park Service get into cultural systems? They got into others.

FROM THE FLOOR: If you are talking about ships, the two are inseparable.

MR. RANDY BIALLAS: I am just stating fact. I am not defending the position. But the only counterpart where we are into this a little would be in Alaska, where we are allowing, say, consumptive hunting. It's traditionally gone on in the land. And this is a preservation of a cultural system. Or in Hawaii with Hawaiians or in the Southwest. That is about it.

But I don't disagree with what you're saying there.

MODERATOR McGRATH: If I could ask you to

identify yourself when you ask a question and if you want to direct it.

I would like to make an observation that I have seen today. We have gone back and forth. The Park Service is an element of American maritime preservation -- maybe. Maybe we'd like to be an element. Maybe we were forced to deal with it.

You have gotten a pretty good look at what the resources we have here are, but I don't think that we want to presuppose policy. What we are interested in is preserving the resources. Today we have seen some parallels with land-base structures that have been drawn. I think some of those parallels are accurate.

Here, the Park Service has a policy not to build reproductions, with exceptions. But isn't that what our policy is, in general? I think it can be well argued, as Walter has just presented today, that this is something that simply is not comparable when you begin to address maritime issues. So, one of the nice things about guidelines and what we are attempting to do is that there is some language and thought that we can adapt, and we differ in other areas.

I think if we can stay away from the National Park Service policy or Department of Interior and talk a little more about the resources and think about what

the goal is, not the policy -- Yes.

MR. DAVID BRINK: David Brink. I'd just like to suggest, if we could all for a moment, in relation to the question, make a quantum leap to the fact that the fleet out here that we are talking about in general is completely now restored. We have done that. It's five years later, it's ten years later, whatever it is. It would seem to me, and, of course, I am the one who is a little more adventuresome than possibly Randy is in the orientation that he comes from, that we might set sail on the Balclutha at the dock, have sail instructions. That we might, in very gingerly conditions, take her loose and tow the Thayer out, and the Thayer might sail in the Bay -- God forbid; that we might get the engine on the Eureka cranked over and operating there at the dock; that Alma might be the most critical thing to the reward system that we have found successful on the Elissa for volunteers that you are going to need to surround these vessels by rewarding them by taking them out sailing on the Alma. I haven't thought of what to do with Evie yet, but I will leave that with Karl.

That kind of life is what will attract the people and get your gate up too -- charge admission on Hyde Street. That is the life and the vitality that,

once the vessels are stabilized, will give great impetus to continually being forced to put money into them to maintain them, because you are going to have people who don't just come down and pay their $3.50 or $5, take a relatively cursory walk through, read the interpretation, get a very minimal expression of the interpretation of the vessel, and go away. Now you're starting to say: We are going to go to Phase 2 on these vessels. And I think this is what Walter is talking about, the end goal: Where do we want to be in five, ten years? I think there is a lot of activity related to these vessels.

MODERATOR McGRATH: I'd like to ask Dana Hewson: What do you think about what David just said?

MR. DAVID BRINK: That's an unfair question.

[Laughter]

MR. DANA HEWSON: I don't think there is a clear answer. We do set sail on the Morgan and the Conrad -- tied to the dock. We have the steamship, steamboat Sabino, which we take out. It makes seven or eight runs a day. We have the schooner yacht Brilliant, which is used, went to Bermuda this year.

I think on a vessel-by-vessel basis, there are certain things that are acceptable and there are certain thing that aren't. I vehemently oppose doing

anything with the Morgan as far as taking her out sailing. I think that would be the wrong thing to do. So I think that, within reason, there are certain things that you can do and there are certain things you can't do.

I am going to get off the subject a little bit. But I think in terms of reproductions on small craft, it answers -- on the really small craft -- it answers all the arguments that are being argued today. Because you can take an original boat which is, either through misuse or it's been in a barn or whatever, but it hasn't been altered appreciably, and you can just put it away, and you've saved the original boat, you've saved all the lines of work, you've saved the original example of workmanship, and you can use the boat by having a reproduction. That, I think, just solves almost all the arguments, but you can't do that with ships. You can't put them away, and most of them have been altered significantly years ago.

With a ship, it's just a continuation of what has been going on.

MODERATOR McGRATH: Dorian, what are you thinking about doing with the Falls of Clyde?

MR. DORIAN TRAVERS: We are restoring the Falls of Clyde as though it were going to go back to

sea. And for years, it had always been my ambition as a young man to see it go back to sea. I can't envision any other way of really getting an experience than actually seeing and feeling the ship driving along.

More recently, question the validity of applying so much of a limited resource into putting it to sea when it could probably be used for better uses. One thing that we are looking at now is to get a smaller vessel that we could take out and sail, which would then give us a possibility of taking Hawaii Maritime Center inner island, I would like to see that done. It would also give us a possibility of letting school children and others get the feel of a large sailing vessel and yet not have to put the money that we would have to put into Falls of Clyde to do it.

That is basically my feeling right now. I am not in a position where I am making the policies for it.

MODERATOR McGRATH: I am using the prerogative of the chair. Jim, what do are you doing on Lahaina, with your ship?

FROM THE FLOOR: I will tell you all about it tonight. That's a long story. It really is. We have no intention of ever sailing the ship.

MODERATOR McGRATH: Because we have a reporter

here, if I could ask you if you could just give a quick summary, without taking away from your discussion tonight.

FROM THE FLOOR: On April 2, 1972, our Board of Directors meet and laid down plans for the development of the Carthaginian. It's a two-paragraph plan which we have adhered to from that date. And we have built a reproduction of a rig with the intention of restoring the spirit of Lahaina to serve as the centerpiece for the town and to bring back those wonderful days when the whalers and the missionaries gathered on that shore to change the culture of the people. That is the purpose of the Carthaginian.

We never had any intention from Day 1 of creating a vessel that would sail. Now, in the construction of the vessel, we will in fact sail. We were very careful to build her so that someday if that opportunity came along, we would be in position to do it. But it was never the original intention. It is a permanently floating cultural asset for the town.

MODERATOR McGRATH: I have time for one more question. Jim Delgado.

MR. JAMES DELGADO: Just to put one issue to bed that was raised yesterday. It seems that we have to make a commitment to change the original fabric of a

vessel. It seems to be the direction that has been expressed here. I raised the concern over saving original fabric and material, and I have talked to a number of you about it, and I would like to suggest a possible guideline in that regard that I think will satisfy both ends, and that is that we recognize the need, as has been expressed in the draft that we have before us, to go ahead and change or to replace historic fabric, that that is acceptable and that we do seek to change the standards of the criteria of the National Register to reflect that change. As I said earlier, currently they don't. But that we make a commitment in cases of archaeologically recovered vessels or vessels in which the decision has been made to no longer maintain them in the water or to preserve them as artifacts, to then preserve as much of the original fabric as possible, to place them in some sort of a context where they are treated as an artifact and suffer no more alteration -- repair the original fabric, repair them -- we maintain them as an artifact in some sort of a museum setting. And that, I think, would recognize and deal with the need for repair and replacement in kind and satisfy archaeological concerns for original fabric and craftsmanship.

MODERATOR McGRATH: Did you want to reply to

that, Strafford?

MR. STRAFFORD MORSS: Well, I think one of the things I did want to say was the Navy ships, of course, are prohibited by public law from becoming self-propelled. Even have enough trouble trying to move them from pier to pier. However, they do represent -- and I have been very fortunate over the last six or seven years to work with Peter and get educated by him in certain areas -- they represent certain industrial processes that are actually no longer available in the United States. Certainly, on the older ships such as Balclutha, you have the riveting, which is very difficult to reproduce, very expensive to reproduce. But on Massachusetts, for instance, you have the armor plate-making process which now, when you scrap one of those ships, the Navy is the first person that looks for the armor plate because they want to use it again on another vessel.

But you also have things such as a lost resource to the world such as the closing of the forge shop in the Boston Naval Shipyard where the process of making die-lock chain, particularly large die-lock chain, is no longer available here in the United States, it's no longer available to the United States Navy. And the United States Navy, for instance, cannot

find this equipment anywhere else in the world. Balt Anchor and Chain chain is perfectly willing to be funded by the government to set up a process so they can do it. But Peter Steele and his Boston National Historic Park has the only forge shop and equipment left that could make this stuff to begin with.

It's very interesting to note that the carriers, the aircraft carriers and the fleet today, they swap anchors and chains. The ones that are in SLEP, Ship Life Extension Program, Philadelphia and whatever, their chains go on to other carriers. And when America lost her chain and anchor off Ethiopia, the Navy mounted a major salvage effort, similar to the hydrogen bomb recovery off Las Palmas in Spain, to get it back.

[Laughter]

MR. STRAFFORD MORSS: It sounds funny, but it's tragic. And it's these industrial processes, I think, that ships like Massachusetts and Cassin Young and the other ships under the Navy Permanent Loan Program -- I think that is our goal in interpretation if we are really going to make a statement.

The heritage that the people here in the United States develop, the work ethic, the work processes -- it's something that not even our friends

in Japan have duplicated after World War II.

MODERATOR McGRATH: Thank you, Strafford. My boss has given me the signal. I've got to recognize her. We have the bus waiting outside.

MS. GLENNIE WALL: I just have one quick question for Walter because of the issue he raised, and I want it in the record.

The Park Service traditionally has said: Do not build less than full-scale reproductions. His comment about building ships of less than full scale, I think is very good and something that ought to be reemphasized.

MR. WALTER RYBKA: I need to clarify that.

FROM THE FLOOR: He didn't say that.

MODERATOR McGRATH: Well, we need to get on the bus, folks. We have a contract. I am sorry. So, thank you very much.

MR. WALTER RYBKA: While you go on the bus, I can get this on record. The object was not to say less than full scale. It was to say small vessels. I am not advocating a half-size clipper. I am advocating building a small schooner, original size, for smaller vessel.

MS. GLENNIE WALL: Okay. Thank you.

[Whereupon, the meeting adjourned at 5:15

o'clock p.m.]

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